Municipal and Non-Municipal Drinking Water Systems

Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption

Ensuring safe drinking water under O. Reg. 170/03, Safe Drinking Water Act, 2002

Introduction

The community lead testing program is a requirement of O. Reg. 170/03 under the Safe Drinking Water Act, 2002.

Municipal and non-municipal drinking water systems are required to take plumbing samples from a mix of private residences and non-residential buildings as well as samples from the distribution system. Samples may only be taken with the consent of the occupant of the premises. The results of the testing will help determine if lead in drinking water is an existing, developing or potential problem within a particular community.

Samples are to be taken during two sampling periods: between December 15 and April 15 ("winter" period) and between June 15 and October 15 ("summer" period).

The standard for lead is 0.010 milligrams per litre, which is equivalent to 10 micrograms per litre.

Standard Sampling and Reduced Sampling

There are two kinds of sampling: standard sampling and reduced sampling. Reduced sampling can replace standard sampling if the results of your testing meet certain criteria. This fact sheet describes the steps to move from standard to reduced sampling.

Below is a table that outlines the number of sampling points required for standard sampling.

Standard Sampling – Number of Sample Locations

Population Served By Drinking Water System	Number of Sampling Points in Plumbing that Serves Private Residences	Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Number of Sampling Points in Distribution System
1 - 99	5	1	1
100 - 499	10	1	2
500 – 3,299	20	2	4
3,300 – 9,999	40	4	8
10,000 – 49,999	60	6	12
50,000 – 99,999	80	8	16
100,000 or more	100	10	20

We have a drinking water system serving a population of less than 50,000. What requirements must we meet in order to be eligible for reduced sampling?

A system serving a population of less than 50,000 people may be able to reduce the number of sampling locations and the frequency of sampling and testing if:

- In TWO consecutive "winter" and "summer" periods of testing that are done over one year, not more than 10 per cent of plumbing sample results exceeded 5 micrograms per litre and no plumbing sample results exceeded the lead standard of 10 micrograms per litre or
- In FOUR consecutive periods of semi-annual testing (the four testing periods done over two years), not more than 10 per cent of plumbing sample results exceeded 10 micrograms per litre.

Both residential plumbing **and** non-residential plumbing samples must be considered in order to be eligible for reduced sampling.

Of the two samples taken on the same day from the same plumbing location, the sample with the lower concentration of lead is not considered in the calculations.

If the system meets the criteria above, the testing frequency drops to two consecutive periods of semi-annual testing **once every three years** AND the number of locations is reduced, as shown in the table below.

Eligible systems do not need to apply for reduced sampling, submit any forms or notify the ministry. You may consider recording your calculations for determining eligibility for reduced sampling and retaining these records as a best management practice.

We have a system serving a population of more than 50,000. What requirements must we meet in order to be eligible for reduced sampling?

A system serving a population of 50,000 or more people may be able to reduce the number of sampling locations and the frequency of sampling and testing if:

- In FOUR consecutive periods of semi-annual testing – not more than 10 per cent of plumbing sample results exceeded the lead standard of 10 micrograms per litre.

While the number of locations drops by roughly 50 per cent, per the table below, there is no reduction in sampling frequency.

Of the two samples taken on the same day from the same plumbing location, the sample with the lower concentration of lead is not considered in the calculations.

Reduced Sampling – Number of Sample Locations

Population Served By Drinking Water System	Number of Sampling Points in Plumbing that Serves Private Residences	Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Number of Sampling Points in Distribution System
1 - 99	3	0	1
100 - 499	5	1	1
500 – 3,299	10	1	2
3,300 – 9,999	20	2	3
10,000 – 49,999	30	3	4
50,000 – 99,999	40	4	8
100,000 or more	50	5	10

When would reduced sampling no longer apply?

The system must revert back to standard sampling if more than 10 per cent of all the plumbing samples taken during any one period of testing (i.e. December to April **or** June to October) exceeded the standard. Of the two samples taken on the same day from the same plumbing location, the sample with the lower concentration of lead is not considered in the calculations.

Is it possible to be exempt from plumbing sampling for lead?

If your drinking water system serves **less than 50,000 people**, your system may be eligible for an exemption from lead sampling in plumbing. A system qualifies for this exemption if:

- Your system is doing reduced sampling, or has been doing plumbing sampling according to an approved relief granted by the ministry **and**
- Less than 10 per cent of plumbing sample locations from two consecutive periods of reduced sampling exceeds the standard, including both "winter" and "summer" periods.

Ministry approval is not required for this exemption. It is automatic once the test results have been submitted to the ministry.

Once exempt, lead testing in plumbing could be reinstated by a Director's direction if changes to water chemistry may increase lead levels in drinking water supplied by plumbing connected to the drinking water system.

If your system is exempt from plumbing sampling for lead you are still required to sample from your distribution system as follows:

- Sample for pH and alkalinity every "winter" and "summer" period each year.
- Sample for lead once every three years, both "winter" and "summer" periods.

See Question 45 in Frequently Asked Questions for an applicable example.

To be clear about your specific requirements, you must refer to the text of O. Reg. 170/03 and the Safe Drinking Water Act, 2002. You can access these at: www.e-laws.gov.on.ca. If you have any legal questions about the application or interpretation of the regulation or legislation, you should consult a lawyer.

If you would like other guides and fact sheets related to drinking water, visit the ministry's Drinking Water Ontario website at www.ontario.ca/drinkingwater or contact our Public Information Centre at picemail.moe@ontario.ca or 416-325-4000 / 1-800-565-4923.

Community Lead Testing Program Overview

System serving less than 50,000 undertakes "Standard Sampling" under Schedule 15.1-4 (No Relief)

System is **eligible** for **"reduced" sampling** after completing 2 consecutive sampling periods if:

- Not more than 10% of plumbing results exceeded 5 µg/L*, AND
- No plumbing results exceeded 10 µg/L.

System is **eligible** for **"reduced" sampling** after completing 4 consecutive sampling periods if:

- Not more than 10% of plumbing results exceeded 10 µg/L*.

Under "reduced" sampling:

- Plumbing and distribution system sampling required every 3 years, both "winter" and "summer" periods (i.e. no sampling required for 2 years).
- Number of sampling locations reduced per the table in Schedule 15.1-5.

If not more than 10% of plumbing samples taken under "reduced" sampling or sampling according to approved ministry relief exceeded 10 µg/L, the system is **exempt from future plumbing sampling**.

However, **distribution system sampling is still required** as follows:

- Alkalinity and pH each year, every "winter" and "summer" period
- Lead once every 3 years, "winter" and "summer" period.

Director can reinstate sampling if future changes impact water chemistry.

System is **not eligible for "reduced" sampling** if:

- More than 10% of plumbing results exceed 10 µg/L* in one sampling period.

System continues to sample under the "standard" sampling requirements until meeting eligibility requirements for "reduced" sampling.

Large Municipal Residential systems are required to prepare a corrosion control plan (CCP) if:

- In 2 out of the 3 most recent sampling periods more than 10% of plumbing results exceeded 10 µg/L*, AND
- In each of the 2 periods, at least 2 samples exceeded 10 µg/L.

Systems may apply for relief to reduce sampling requirements.

CCP is due 1 year from the end of the "qualifying" period.

- * µg/L = micrograms per litre
- 1 µg/L = 0.001 mg/L

Information is provided as a summary only. Refer to O. Regulation 170/03 for full details.

Ontario

System serving less than 50,000 conducts Sampling under Approved Relief

System is **eligible for plumbing exemption** if:

- System completes all requirements under the approval, AND
- In EACH of 2 consecutive periods (e.g., a "winter" and "summer" period), not more than 10% of all plumbing samples exceeded 10 µg/L*.

The system is **exempt** from plumbing sampling.

However, distribution system sampling is still required as follows:

- Alkalinity and pH each year, every "winter" and "summer" period
- Lead once every 3 years, "winter" and "summer" period.

Director can reinstate sampling if future changes impact water chemistry.

System is **not eligible for plumbing exemption** if:

- More than 10% of plumbing results exceed 10 µg/L* in one sampling period.

System continues to sample under the "standard" sampling requirements until meeting eligibility requirements for "reduced" sampling.

- Large Municipal Residential systems are required to prepare a corrosion control plan (CCP) if:
- In 2 out of the 3 most recent sampling periods more than 10% of plumbing results exceeded 10 µg/L* AND
- In each of the 2 periods, at least 2 samples exceeded 10 µg/L*.

Systems may apply for relief to reduce sampling requirements.

CCP is due 1 year from the end of the "qualifying" period.

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- 1 µg/L = 0.001 mg/L

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Ontario

System serving 50,000 or greater undertakes "Standard Sampling" under 15.1-4

System is **eligible** for "reduced" sampling after completing 4 consecutive sampling periods if:

- Not more than 10% of plumbing results exceeded 10 µg/L in <u>EACH</u> period.

Under "reduced" sampling:

- Number of sampling locations reduced per the table in Schedule 15.1-5.
- System must continue to sample EVERY year, as there is no reduction in frequency.

If more than 10% of plumbing samples taken under "reduced" sampling exceed 10 µg/L, the system returns to "standard" sampling requirements.

System is NOT eligible for plumbing exemption.

System is **not eligible** for "reduced" sampling if:

- more than 10% of plumbing results exceed 10 µg/L in one sampling period.

System continues to sample under the "standard" sampling requirements until meeting eligibility requirements for "reduced" sampling.

- Large Municipal Residential systems are required to prepare a corrosion control plan (CCP) if:
- In 2 out of the 3 most recent sampling periods more than 10% of plumbing results exceeded 10 µg/L AND
- In each of the 2 periods, at least 2 samples exceeded 10 µg/L.

Systems may apply for relief to reduce sampling requirements.

CCP is due 1 year from the end of the "qualifying" period.

- * µg/L = micrograms per litre
- 1 µg/L = 0.001 mg/L

Information is provided as a summary only. Refer to O. Regulation 170/03 for full details.